

CPC**COOPERATIVE PATENT CLASSIFICATION****G01J**

MEASUREMENT OF INTENSITY, VELOCITY, SPECTRAL CONTENT, POLARISATION, PHASE OR PULSE CHARACTERISTICS OF INFRA-RED, VISIBLE OR ULTRA-VIOLET LIGHT
COLORIMETRY
RADIATION PYROMETRY (light sources [F21](#) , [H01J](#) , [H01K](#) , [H05B](#) ; investigating properties of materials by optical means [G01N](#))

NOTE

This subclass covers the detection of the presence or absence of infra-red, visible, or ultra-violet light, not otherwise provided for.

Attention is drawn to the Notes following the title of class [G01](#) .

Guide heading:**G01J 1/00**

Photometry, e.g. photographic exposure meter (spectrophotometry [G01J 3/00](#); specially adapted for radiation pyrometry [G01J 5/00](#)) {exposure meters built in cameras [G03B 17/06](#) }

- G01J 1/02 . Details
- G01J 1/0204 .. { Compact construction }
- G01J 1/0209 ... { Monolithic }
- G01J 1/0214 .. { Constructional arrangements for removing stray light }
- G01J 1/0219 .. { Electrical interface; User interface }
- G01J 1/0223 .. { Sample holders for photometry }
- G01J 1/0228 .. { Control of working procedures; Failure detection; Spectral bandwidth calculation }
- G01J 1/0233 .. { Handheld }
- G01J 1/0238 .. { making use of sensor-related data, e.g. for identification of sensor or optical parts }
- G01J 1/0242 .. { Control or determination of height or angle information of sensors or receivers; Goniophotometry }
- G01J 1/0247 .. { using a charging unit }
- G01J 1/0252 .. { Constructional arrangements for compensating for fluctuations caused by e.g. temperature, or using cooling or temperature stabilization of parts of the device; Controlling the atmosphere inside a photometer; Purge systems, cleaning devices (protection against electromagnetic interferences [G01J 2001/0276](#)) }
- G01J 1/0266 .. { Field-of-view determination; Aiming or pointing of a photometer; Adjusting alignment; Encoding angular position; Size of the measurement area; Position tracking; Photodetection involving different fields of view for a single detector }
- G01J 1/0271 .. { Housings; Attachments or accessories for photometers }
- G01J 1/029 .. { Multi-channel photometry }
- G01J 1/0295 .. { Constructional arrangements for removing other types of optical noise or for performing calibration }

- G01J 1/04 .. Optical or mechanical part {supplementary adjustable parts }
- G01J 1/0403 ... { Mechanical elements; Supports for optical elements; Scanning arrangements }
- G01J 1/0407 ... { Optical elements not provided otherwise, e.g. manifolds, windows, holograms, gratings }
- G01J 1/0411 { using focussing or collimating elements, i.e. lenses or mirrors; Aberration correction }
- G01J 1/0414 { using plane or convex mirrors, parallel phase plates, or plane beam-splitters }
- G01J 1/0418 { using attenuators }
- G01J 1/0422 { using light concentrators, collectors or condensers }
- G01J 1/0425 { using optical fibers }
- G01J 1/0429 { using polarisation elements }
- G01J 1/0433 { using notch filters }
- G01J 1/0437 { using masks, aperture plates, spatial light modulators, spatial filters, e.g. reflective filters }
- G01J 1/044 { using shutters }
- G01J 1/0444 { using means for replacing an element by another, e.g. for replacing a filter or grating }
- G01J 1/0448 { Adjustable, e.g. focussing }
- G01J 1/0451 { using means for illuminating a slit efficiently, e.g. entrance slit of a photometer or entrance face of fiber }
- G01J 1/0455 { having a throughhole enabling the optical element to fulfil an additional optical function, e.g. a mirror or grating having a through-hole for a light collecting or light injecting optical fibre }
- G01J 1/0459 { using an optical amplifier of light or coatings to improve optical coupling }
- G01J 1/0462 { Slit arrangements }
- G01J 1/0466 { with a sighting port }
- G01J 1/047 { using extension/expansion of solids or fluids, change of resonant frequency or extinction effect }
- G01J 1/0474 { Diffusers ([cavities G01J 2001/0481](#)) }
- G01J 1/0477 { Prisms, wedges }
- G01J 1/0488 ... { with spectral filtering }
- G01J 1/0492 { using at least two different filters }
- G01J 1/06 ... Restricting the angle of incident light
- G01J 1/08 .. Arrangements of light sources specially adapted for photometry {standard sources, also using luminescent or radioactive material }

- G01J 1/10 . by comparison with reference light or electric value {provisionally void }
- G01J 1/12 .. using wholly visual means ([G01J 1/20 takes precedence](#))
- G01J 1/122 ... { Visual exposure meters for determining the exposure time in photographic recording or reproducing }
- G01J 1/124 {based on the comparison of the intensity of measured light with a comparison source or comparison illuminated surface }
- G01J 1/126 {for enlarging apparatus }
- G01J 1/128 {for copy- or printing apparatus }
- G01J 1/14 ... using comparison with a surface of graded brightness, {e.g. for view taking; for

- analytical applications [G01N 21/293](#) }
- G01J 1/16 . . . using electric radiation detectors ([G01J 1/20](#) takes precedence)
- G01J 1/1626 . . . {Arrangements with two photodetectors, the signals of which are compared }
- G01J 1/18 . . . using comparison with a reference electric value
- G01J 1/20 . . . intensity of the measured or reference value being varied to equalise their effects at the detectors, e.g. by varying incidence angle
- G01J 1/22 . . . using a variable element in the light-path, e.g. filter, polarising means ([G01J 1/34](#) takes precedence)
- G01J 1/24 using electric radiation detectors
- G01J 1/26 adapted for automatic variation of the measured or reference value ([regulation of light intensity G05D 25/00](#))
- G01J 1/28 . . . using variation of intensity or distance of source ([G01J 1/34](#) takes precedence)
- G01J 1/30 using electric radiation detectors
- G01J 1/32 adapted for automatic variation of the measured or reference value ([regulation of light intensity G05D 25/00](#))
- G01J 1/34 . . . using separate light paths used alternately or sequentially, e.g. flicker
- G01J 1/36 using electric radiation detectors
- G01J 1/38 . . . using wholly visual means ([G01J 1/10](#) takes precedence)
- G01J 1/40 . . . using limit or visibility or extinction effect
- G01J 1/42 . . . using electric radiation detectors ([optical or mechanical part G01J 1/04](#); by comparison with a reference light or electric value [G01J 1/10](#))
- G01J 1/4204 . . . { with determination of ambient light (solar light [G01J 2001/4266](#)) }
- G01J 1/4209 . . . {Photoelectric exposure meters for determining the exposure time in recording or reproducing }
- G01J 1/4214 . . . {specially adapted for view-taking apparatus }
- G01J 1/4219 . . . {specially adapted for enlargers }
- G01J 1/4223 . . . {specially adapted for copy - or printing apparatus }
- G01J 1/4228 . . . { arrangements with two or more detectors, e.g. for sensitivity compensation }
- G01J 1/4257 . . . {applied to monitoring the characteristics of a beam, e.g. laser beam, headlamp beam ([monitoring arrangements for lasers in general H01S 3/0014](#)) }
- G01J 1/429 . . . {applied to measurement of ultraviolet light ([using counting tubes G01T](#)) }
- G01J 1/44 . . . Electric circuits {for command of an exposure part [G03B 7/02](#) }
- G01J 1/46 using a capacitor
- G01J 1/48 . . . using chemical effects
- G01J 1/50 . . . using change in colour of an indicator, e.g. actinometer
- G01J 1/52 . . . using photographic effects
- G01J 1/54 . . . by observing photo-reactions between gases
- G01J 1/56 . . . using radiation pressure or radiometer effect
- G01J 1/58 . . . using luminescence generated by light
- G01J 1/60 . . . by measuring the pupil of the eye

G01J 3/00	Spectrometry Spectrophotometry Monochromators Measuring colour
G01J 3/02	. Details
G01J 3/0202	.. { Mechanical elements; Supports for optical elements }
G01J 3/0205	.. { Optical elements not provided otherwise, e. g. optical manifolds, diffusers, windows }
G01J 3/0208	... { using focussing or collimating elements, e.g. lenses or mirrors; performing aberration correction }
G01J 3/021	... { using plane or convex mirrors, parallel phase plates, or particular reflectors }
G01J 3/0213	... { using attenuators }
G01J 3/0216	... { using light concentrators or collectors or condensers }
G01J 3/0218	... { using optical fibers }
G01J 3/0221	.... { the fibers defining an entry slit }
G01J 3/0224	... { using polarising or depolarising elements }
G01J 3/0227	... { using notch filters }
G01J 3/0229	... { using masks, aperture plates, spatial light modulators or spatial filters, e.g. reflective filters }
G01J 3/0232	... { using shutters }
G01J 3/0235	... { using means for replacing an element by another, for replacing a filter or a grating }
G01J 3/0237	... { Adjustable, e.g. focussing }
G01J 3/024	... { using means for illuminating a slit efficiently (e.g. entrance slit of a spectrometer or entrance face of fiber) }
G01J 3/0243	... { having a through-hole enabling the optical element to fulfil an additional optical function, e.g. a mirror or grating having a throughhole for a light collecting or light injecting optical fiber }
G01J 3/0245	... { using an optical amplifier of light, e.g. doped fiber }
G01J 3/0248	... { using a sighting port, e.g. camera or human eye }
G01J 3/0251	... { Colorimeters making use of an integrating sphere }
G01J 3/0254	... { Spectrometers, other than colorimeters, making use of an integrating sphere }
G01J 3/0256	.. { Compact construction }
G01J 3/0259	... { Monolithic }
G01J 3/0262	.. { Constructional arrangements for removing stray light }
G01J 3/0264	.. { Electrical interface; User interface }
G01J 3/0267	.. { Sample holders for colorimetry }
G01J 3/027	.. { Control of working procedures of a spectrometer; Failure detection; Bandwidth calculation }
G01J 3/0272	.. { Handheld }
G01J 3/0275	.. { making use of sensor-related data, e. g. for identification of sensor parts or optical elements }
G01J 3/0278	.. { Control or determination of height or angle information for sensors or receivers }
G01J 3/0283	.. { using a charging unit }

- G01J 3/0286 .. { Constructional arrangements for compensating for fluctuations caused by temperature, humidity or pressure, or using cooling or temperature stabilization of parts of the device; Controlling the atmosphere inside a spectrometer, e.g. vacuum }
- G01J 3/0289 .. { Field-of-view determination; Aiming or pointing of a spectrometer; Adjusting alignment; Encoding angular position; Size of measurement area; Position tracking }
- G01J 3/0291 .. { Housings; Spectrometer accessories; Spatial arrangement of elements, e.g. folded path arrangements }
- G01J 3/0294 .. { Multi-channel spectroscopy }
- G01J 3/0297 .. { Constructional arrangements for removing other types of optical noise or for performing calibration }
- G01J 3/04 .. Slit arrangements {slit adjustment }
- G01J 3/06 .. Scanning arrangements {arrangements for order-selection }
- G01J 3/08 .. Beam switching arrangements
- G01J 3/10 .. Arrangements of light sources specially adapted for spectrometry or colorimetry
- G01J 3/108 ... {for measurement in the infra-red range }

- G01J 3/12 . Generating the spectrum
Monochromators
- G01J 3/1256 .. {using acousto-optic tunable filter; (acousto-optic elements or systems [G02F 1/11](#), [G02F 1/33](#)) }
- G01J 3/14 .. using refracting elements, e.g. prisms ([G01J 3/18](#), [G01J 3/26](#) take precedence) {prisms per se [G02B 5/04](#) }
- G01J 3/16 ... with autocollimation
- G01J 3/18 .. using diffraction elements, e.g. grating ([gratings per se G02B](#))
- G01J 3/1804 ... {Plane gratings }
- G01J 3/1809 ... {Echelle gratings }
- G01J 3/1833 ... {Grazing incidence }
- G01J 3/1838 ... {Holographic gratings }
- G01J 3/189 ... { using at least one grating in an off-plane configuration }
- G01J 3/1895 ... { using fiber Bragg gratings or gratings integrated in a waveguide }
- G01J 3/20 ... Rowland circle spectrometers
- G01J 3/22 ... Littrow mirror spectrometers

- WARNING**
- material provisionally in [G01J 3/18](#)

- G01J 3/24 ... using gratings profiled to favour a specific order
- G01J 3/26 .. using multiple reflection, e.g. Fabry-Perot interferometer, variable interference filters

- G01J 3/28 . Investigating the spectrum (using colour filters [G01J 3/51](#))
- G01J 3/2803 .. {using photoelectric array detector }
- G01J 3/2823 .. {Imaging spectrometer }
- G01J 3/2846 .. { using modulation grid; Grid spectrometers }

- G01J 3/2889 .. {Rapid scan spectrometers; Time resolved spectrometry }
- G01J 3/30 .. Measuring the intensity of spectral line directly on the spectrum itself ([G01J 3/42](#), [G01J 3/44](#) take precedence)
- G01J 3/32 ... Investigating bands of a spectrum in sequence by a single detector
- G01J 3/36 ... Investigating two or more bands of a spectrum by separate detectors
- G01J 3/40 .. Measuring the intensity of spectral lines by determining density of a photograph of the spectrum
Spectrography ([G01J 3/42](#), [G01J 3/44](#) take precedence)
- G01J 3/42 .. Absorption spectrometry
Double beam spectrometry
Flicker spectrometry
Reflection spectrometry (beam switching arrangements [G01J 3/08](#))
- G01J 3/427 ... Dual wavelengths spectrometry
- G01J 3/433 ... Modulation spectrometry
Derivative spectrometry
- G01J 3/4338 {Frequency modulated spectrometry }
- G01J 3/44 .. Raman spectrometry
Scattering spectrometry; {Fluorescence spectrometry }
- G01J 3/4406 ... {Fluorescence spectrometry }
- G01J 3/4412 ... {Scattering spectrometry (particle sizing by light scattering [G01N 15/0205](#); optical velocimetry of particles [G01P 5/00D](#)) }
- G01J 3/443 .. Emission spectrometry
- G01J 3/447 .. Polarisation spectrometry
- G01J 3/45 .. Interferometric spectrometry
- G01J 3/453 ... by correlation of the amplitudes
- G01J 3/4531 {Devices without moving parts }
- G01J 3/4532 {Devices of compact or symmetric construction ([G01J 3/4531](#) takes precedence) }
- G01J 3/4535 {Devices with moving mirror ([G01J 3/4532](#) takes precedence) }
- G01J 3/4537 {Devices with refractive scan }
- G01J 3/457 .. Correlation spectrometry, e.g. of the intensity ([G01J 3/453](#) takes precedence)
- G01J 3/46 . Measurement of colour
Colour measuring devices, e.g. colorimeters ([measuring colour temperature G01J 5/60](#))
- G01J 3/461 .. {with colour spinners }
- G01J 3/462 .. { Computing operations in or between colour spaces; Colour management systems }
- G01J 3/463 .. { Colour matching }
- G01J 3/465 .. { taking into account the colour perception of the eye; using tristimulus detection }
- G01J 3/50 .. using electric radiation detectors
- G01J 3/501 ... { Colorimeters using spectrally-selective light sources, e.g. LEDs }
- G01J 3/502 ... { using a dispersive element, e.g. grating, prism }
- G01J 3/504 ... { Goniometric colour measurements, for example measurements of metallic or flake based paints }
- G01J 3/505 ... { measuring the colour produced by lighting fixtures other than screens, monitors, displays or CRTs }

- G01J 3/506 . . . { measuring the colour produced by screens, monitors, displays or CRTs }
- G01J 3/508 . . . { measuring the colour of teeth }
- G01J 3/51 . . . using colour filters
- G01J 3/513 { having fixed filter-detector pairs }
- G01J 3/52 . . using colour charts
- G01J 3/522 . . . {circular colour charts }
- G01J 3/524 . . . { Calibration of colorimeters }
- G01J 3/526 . . . { for choosing a combination of different colours, e.g. to produce a pleasing effect for an observer }
- G01J 3/528 { using colour harmony theory }

- G01J 4/00** **Measuring polarisation of light** (investigating or analysing materials by measuring rotation of plane of polarised light [G01N 21/21](#))

- G01J 4/02 . . Polarimeters of separated-field type
Polarimeters of half-shadow type

- G01J 4/04 . . Polarimeters using electric detection means ([G01J 4/02](#) takes precedence)

- G01J 5/00** **Radiation pyrometry** (photometry in general [G01J 1/00](#); spectrometry in general [G01J 3/00](#)) {measuring temperature in general, i.e. with a contacting sensor [G01K](#) ; calorimetry of radiation beams [G01K 17/00](#); direction finders for radiant sources [G01S](#) ; intrusion detection by radiation [G08B](#) }

- G01J 5/0003 . . {for sensing the radiant heat transfer of samples, e.g. emittance meter }
- G01J 5/0007 . . . { of wafers or semiconductor substrates, e.g. using Rapid Thermal Processing }
- G01J 5/0011 . . . { Ear thermometers ([G01J 5/021](#) and [G01J 5/049](#) take precedence) }

- G01J 5/0014 . . {for sensing the radiation from gases, flames }
- G01J 5/0018 . . . { Flames, plasma or welding }

- G01J 5/0022 . . {for sensing the radiation of moving bodies }
- G01J 5/0025 . . . { Living bodies (ear thermometers [G01J 5/0011](#); detecting, measuring or recording for diagnostic purposes [A61B5](#)) }

- G01J 5/0037 . . { for sensing the heat emitted by liquids }
- G01J 5/004 . . . { by molten metals }

- G01J 5/0044 . . { Furnaces, ovens, kilns ([G01J 5/0007](#), [G01J 5/004](#) take precedence) }

- G01J 5/0066 . . { for hot spots detection }

- G01J 5/007 . . { for earth observation }

- G01J 5/0088 . . { in turbines }

- G01J 5/0096 . . { for measuring wires, electrical contacts or electronic systems }

- G01J 5/02 . Details
- G01J 5/0205 .. { Mechanical elements; Supports for optical elements }
- G01J 5/021 .. { Probe covers for thermometers, e.g. tympanic thermometers; Containers for probe covers; Disposable probes }
- G01J 5/0215 .. { Compact construction }
- G01J 5/022 ... { Monolithic }
- G01J 5/0225 .. { Shape of the cavity itself or of elements contained in or suspended over the cavity }
- G01J 5/023 ... { Particular leg structure or construction or shape; Nanotubes }
- G01J 5/0235 ... { Spacers, e.g. for avoidance of stiction }
- G01J 5/024 ... { Special manufacturing steps or sacrificial layers or layer structures }
- G01J 5/0245 ... { for performing thermal shunt }
- G01J 5/025 .. { Interfacing a pyrometer to an external device or network; User interface }
- G01J 5/0255 .. { Sample holders for pyrometry; Cleaning of sample ([using a gas purge G01J 5/029](#)) }
- G01J 5/026 .. { Control of working procedures of a pyrometer, other than calibration ([calibration G01J 2005/0048](#) and [G01J 5/522](#)) ; Detecting failures in the functioning of a pyrometer; Bandwidth calculation; Gain control; Security control }
- G01J 5/0265 .. { Handheld, portable ([ear thermometers G01J 5/049](#)) }
- G01J 5/027 .. { making use of sensor-related data, e.g. for identification of sensor parts or optical elements }
- G01J 5/0275 .. { Control or determination of height or distance or angle information for sensors or receivers }
- G01J 5/028 .. { using a charging unit or battery }
- G01J 5/0285 .. { Constructional arrangements for compensating for fluctuations caused by humidity, pressure or electromagnetic waves; Controlling the atmosphere inside a pyrometer ([G01J 5/029](#) takes precedence) }
- G01J 5/029 .. { using a gas purge }
- G01J 5/0295 .. { Nulling devices or absolute detection }
- G01J 5/04 .. Casings {Mountings }
- G01J 5/041 ... {Mountings in enclosures or in a particular environment }
- G01J 5/042 { High-temperature environment ([G01J 5/0007](#), [G01J 5/0044](#), [G01J 5/0088](#) and [G01J 5/004](#) take precedence) }
- G01J 5/043 { Prevention or determination of dust, smog or clogging ([G01J 5/029](#) takes precedence) }
- G01J 5/044 { Environment with strong vibrations or shocks }
- G01J 5/045 { Sealings; Vacuum enclosures; Encapsulated packages; Wafer bonding structures; Getter arrangements ([getter arrangements per se H01L 23/26](#) and [H01L 31/0203B](#)) }
- G01J 5/046 ... { Materials; Selection of thermal materials }
- G01J 5/047 ... { Mobile mounting; Scanning arrangements }
- G01J 5/048 ... { Protective parts }
- G01J 5/049 ... { Casings for tympanic thermometers }
- G01J 5/06 .. Arrangements for eliminating effects of disturbing radiation
- G01J 5/061 ... {using cooling or thermostating of parts of the apparatus ([cooling techniques in](#)

		general F17C , F25J) }
G01J 5/08	..	Optical features {optical-mechanical scanning H04N 5/33 , G02B 26/10 }
G01J 5/0803	...	{ Optical elements not provided otherwise, e.g. optical manifolds, gratings, holograms, cubic beamsplitters, prisms, particular coatings }
G01J 5/0806	....	{ using focussing or collimating elements,e.g. lenses or mirrors }
G01J 5/0809	....	{ using plane or convex mirrors, parallel phase plates or particular reflectors }
G01J 5/0812	....	{ using attenuators }
G01J 5/0815	....	{ using light concentrators, collectors or condensers }
G01J 5/0818	....	{ using waveguides, rods or tubes }
G01J 5/0821	.....	{ using optical fibers }
G01J 5/0825	....	{ using polarizing elements }
G01J 5/0828	....	{ using notch filters }
G01J 5/0831	....	{ using masks, e.g. structured apertures, using aperture plates or using spatial light modulators or spatial filters, e.g. reflective filters }
G01J 5/0834	....	{ using shutters or modulators }
G01J 5/0837	....	{ using micro-antennas, e.g. bow-tie }
G01J 5/084	....	{ Adjustable, slidable }
G01J 5/0843	.....	{ Manually adjustable }
G01J 5/0846	....	{ using multiple detectors for performing different types of detection, e.g. radiometry and reflectometry channels }
G01J 5/085	....	{ having a throughhole enabling the optical element to fulfil an additional optical function, e.g. a mirror or grating having a throughhole for a light collecting or light injecting optical fiber }
G01J 5/0853	....	{ using infrared absorbers other than the usual absorber layers deposited on infrared detectors like bolometers, wherein the heat propagation between the absorber and the detecting element occurs within a solid }
G01J 5/0856	....	{ Slit arrangements }
G01J 5/0859	....	{ using a sighting arrangement, or a camera for the same purpose }
G01J 5/0862	....	{ using optical filters (G01J 5/602 , G01J 5/0828 take precedence) }
G01J 5/0865	....	{ using means for replacing an element by another, e.g. for replacing a filter }
G01J 5/0868	....	{ using means for illuminating a slit or a surface efficiently, e.g. entrance slit of a pyrometer or entrance face of a fiber }
G01J 5/0871	....	{ Beam switching arrangements; Photodetection involving different fields of view for a single detector }
G01J 5/0875	....	{ Windows or their fastening arrangements }
G01J 5/0878	....	{ Diffusers }
G01J 5/0881	...	{ Compact construction }
G01J 5/0884	....	{ Monolithic }
G01J 5/0887	...	{ Integrating cavities mimicking black bodies, wherein the heat propagation between the black body and the measuring element does not occur within a solid; Use of bodies placed inside the fluid stream for measurement of the temperature of gases; Use of the reemission from a surface, e.g. reflective surface; Emissivity enhancement by multiple reflections }
G01J 5/089	...	{ Field-of-view determination; Aiming or pointing of a pyrometer; Adjusting alignment; Encoding angular position; Size of the measuring area; Position tracking }

- G01J 5/0893 . . . { Arrangements to attach devices to a pyrometer, i.e. attaching an optical interface; Spatial relative arrangement of optical elements, e.g. folded beam path ([G01J 5/049](#) takes precedence) }
- G01J 5/0896 . . . { using a light source, e.g. for illuminating a surface }
- G01J 5/10 . using electric radiation detectors
- G01J 5/12 . . using thermoelectric elements, e.g. thermocouples ([thermoelectric elements per se H01L 35/00](#), [H01L 37/00](#))
- G01J 5/14 . . . Electrical features
- G01J 5/16 Arrangements with respect to the cold junction
Compensating influence of ambient temperature or other variables
- G01J 5/18 Special adaptation for indicating or recording ([indicating or recording measured values in general G01D](#))
- G01J 5/20 . . using resistors, thermistors, or semi-conductors sensitive to radiation
- G01J 5/22 . . . Electrical features
- G01J 5/24 Use of a specially-adapted circuit, e.g. bridge circuit
- G01J 5/26 Special adaptation for indicating or recording ([indicating or recording measured values in general G01D](#))
- G01J 5/28 . . using photo-emissive, photo-conductive, or photo-voltaic cells
- G01J 5/30 . . . Electrical features
- G01J 5/32 Special adaptation for indicating or recording ([indicating or recording measured values in general G01D](#))
- G01J 5/34 . . using capacitors {e.g. [pyroelectric elements](#) }
- G01J 5/36 . . using ionisation of gases
- G01J 5/38 . using extension or expansion of solids or fluids
- G01J 5/40 . . using bimetallic elements
- G01J 5/42 . . using Golay cells
- G01J 5/44 . . using change of resonant frequency, e.g. of piezo-electric crystal
- G01J 5/46 . using radiation pressure or radiometer effect
- G01J 5/48 . using wholly visual means
- G01J 5/50 . using techniques specified in the subgroups below
- G01J 5/505 . . {[using photographic recording](#) }
- G01J 5/52 . . using comparison with reference sources, e.g. disappearing-filament pyrometer
- G01J 5/522 . . . {[Reference sources, e.g. standard lamps; Black bodies](#) }
- G01J 5/524 . . . {[using a reference heater of the emissive surface type, e.g. for selectively absorbing materials](#) }
- G01J 5/54 . . . Optical features
- G01J 5/56 . . . Electrical features
- G01J 5/58 . . using absorption
using polarisation
using extinction effect
- G01J 5/60 . . using determination of colour temperature {[Pyrometry using two wavelengths filtering; using selective, monochromatic or bandpass filtering; using spectral](#)

- scanning }
- G01J 5/601 . . . {using spectral scanning }
- G01J 5/602 . . . {using selective, monochromatic or bandpass filtering }
- G01J 5/605 . . . {using visual determination }
- G01J 5/62 . . . using means for chopping the light {Compensation for background radiation of chopper element }

- G01J 7/00 Measuring velocity of light**

- G01J 9/00 Measuring optical phase difference** (devices or arrangements for controlling the phase of light beams [G02F 1/01](#))
Determining degree of coherence
Measuring optical wavelength (spectrometry [G01J 3/00](#))

- G01J 9/02 . . . by interferometric methods (using interferometers for measuring optically the linear dimensions of objects [G01B 9/02](#))
- G01J 9/0215 . . . {by shearing interferometric methods }
- G01J 9/0246 . . . {Measuring optical wavelength }

- G01J 9/04 . . . by beating two waves of a same source but of different frequency and measuring the phase shift of the lower frequency obtained

- G01J 11/00 Measuring the characteristics of individual optical pulses or of optical pulse trains**

- Guide heading:**

- G01J 2001/00 Photometry, e.g. photographic exposure meter** (spectrophotometry [G01J 3/00](#); specially adapted for radiation pyrometry [G01J 5/00](#)) {exposure meters built in cameras [G03B 17/06](#) }

- G01J 2001/02 . . . Details
- G01J 2001/0257 . . . portable
- G01J 2001/0261 . . . Pocket size
 Card size
- G01J 2001/0276 . . . Protection
- G01J 2001/028 . . . against liquid
- G01J 2001/0285 . . . against laser damage
- G01J 2001/04 . . . Optical or mechanical part {supplementary adjustable parts }
- G01J 2001/0481 . . . Preset integrating sphere or cavity
- G01J 2001/0485 . . . Cosinus correcting or purposely modifying the angular response of a light sensor
- G01J 2001/0488 . . . { with spectral filtering }
- G01J 2001/0496 using fiber Bragg gratings
- G01J 2001/06 . . . Restricting the angle of incident light
- G01J 2001/061 Baffles

G01J 2001/062	....	by fibre-optic packed bundle
G01J 2001/063	....	with selectable field of view
G01J 2001/065	.....	by changing elements
G01J 2001/066	.....	with an aiming optical device
G01J 2001/067	....	for angle scan
G01J 2001/068	.....	by diaphragm or the like
G01J 2001/08	..	Arrangements of light sources specially adapted for photometry {standard sources, also using luminescent or radioactive material }
G01J 2001/083	...	Testing response of detector
G01J 2001/086	...	Calibrating drift correction
G01J 2001/10	.	by comparison with reference light or electric value {provisionally void }
G01J 2001/16	..	using electric radiation detectors (G01J 1/20 takes precedence)
G01J 2001/1605	...	Null method
G01J 2001/161	...	Ratio method, i.e. I_m/I_r
G01J 2001/1615	....	Computing a difference/sum ratio, i.e. $(I_m - I_r) / (I_m + I_r)$
G01J 2001/1621	....	Comparing a duty ratio of pulses
G01J 2001/1626	...	{Arrangements with two photodetectors, the signals of which are compared }
G01J 2001/1631	....	Bridge circuit
G01J 2001/1636	....	one detector directly monitoring the source, e.g. also impulse time controlling
G01J 2001/1642	.....	and acting on the detecting circuit
G01J 2001/1647	....	one signal maintained constant
G01J 2001/1652	....	one detector being transparent before the other one
G01J 2001/1657	....	one signal being spectrally modified, e.g. for UV
G01J 2001/1663	....	two detectors of different sensitivity
G01J 2001/1668	...	the measuring signal itself varying in time, e.g. periodic, for example blood pulsation
G01J 2001/1673	...	using a reference sample
G01J 2001/1678	...	Comparing time separated signals, i.e. chopped
G01J 2001/1684	....	and selecting also a DC level from the signal
G01J 2001/1689	....	one separated signal being processed differently
G01J 2001/1694	....	with a signal from on/off switched light source
G01J 2001/18	...	using comparison with a reference electric value
G01J 2001/182	....	with SH sample and hold circuits
G01J 2001/184	.....	on a succession of signals
G01J 2001/186	....	Comparison or correction from an electric source within the processing circuit
G01J 2001/188	.....	on pulse train
G01J 2001/20	..	intensity of the measured or reference value being varied to equalise their effects at the detectors, e.g. by varying incidence angle
G01J 2001/22	...	using a variable element in the light-path, e.g. filter, polarising means (G01J 1/34 takes precedence)
G01J 2001/24	....	using electric radiation detectors
G01J 2001/242	.....	Filter wheel, i.e. absorption filter series graduated

G01J 2001/245	.....	with two or more separate attenuated steps
G01J 2001/247	.....	of spectral wedge type
G01J 2001/34	...	using separate light paths used alternately or sequentially, e.g. flicker
G01J 2001/36	....	using electric radiation detectors
G01J 2001/363	.....	Chopper stabilisation
G01J 2001/366	.....	Balancing two paths
G01J 2001/42	.	using electric radiation detectors (optical or mechanical part G01J 1/04 ; by comparison with a reference light or electric value G01J 1/10)
G01J 2001/4228	..	{ arrangements with two or more detectors, e.g. for sensitivity compensation }
G01J 2001/4233	...	with selection of detector
G01J 2001/4238	..	Pulsed light
G01J 2001/4242	..	Modulated light, e.g. for synchronizing source and detector circuit
G01J 2001/4247	..	for testing lamps or other light sources
G01J 2001/4252	...	for testing LED`s
G01J 2001/4257	..	{ applied to monitoring the characteristics of a beam, e.g. laser beam, headlamp beam (monitoring arrangements for lasers in general H01S 3/0014) }
G01J 2001/4261	...	Scan through beam in order to obtain a cross-sectional profile of the beam
G01J 2001/4266	..	for measuring solar light
G01J 2001/4271	...	Pyrrheliometer
G01J 2001/4276	...	Solar energy integrator over time
G01J 2001/428	...	for sunlight scattered by atmosphere
G01J 2001/4285	...	Pyranometer, i.e. integrating over space
G01J 2001/4295	..	using a physical effect not covered by other subgroups of G01J 1/42
G01J 2001/44	..	Electric circuits {for command of an exposure part G03B 7/02 }
G01J 2001/4406	...	Plural ranges in circuit, e.g. switchable ranges Adjusting sensitivity selecting gain values
G01J 2001/4413	...	Type
G01J 2001/442	.....	Single-photon detection or photon counting
G01J 2001/4426	.....	with intensity to frequency or voltage to frequency conversion [IFC or VFC]
G01J 2001/4433	.....	Peak sensing
G01J 2001/444	...	Compensating Calibrating, e.g. dark current, temperature drift, noise reduction or baseline correction Adjusting
G01J 2001/4446	...	Type of detector
G01J 2001/4453	.....	PMT
G01J 2001/446	.....	Photodiode
G01J 2001/4466	.....	Avalanche
G01J 2001/4473	.....	Phototransistor
G01J 2001/448	.....	Array (CCD)
G01J 2001/4486	.....	Streak tube
G01J 2001/4493	.....	with image intensifier tube (IIT)

G01J 2003/00	Spectrometry Spectrophotometry Monochromators Measuring colour
G01J 2003/003	. Comparing spectra of two light sources
G01J 2003/006	. Fundamentals or review articles
G01J 2003/02	. Details
G01J 2003/0281	.. slitless
G01J 2003/04	.. Slit arrangements {slit adjustment }
G01J 2003/042	... Slit wheel
G01J 2003/045	... Sequential slits Multiple slits
G01J 2003/047	... Configuration of two or more entry or exit slits for predetermined delta-lambda
G01J 2003/06	.. Scanning arrangements {arrangements for order-selection }
G01J 2003/061	... Mechanisms, e.g. sine bar
G01J 2003/062	... motor-driven
G01J 2003/063	.... Step motor
G01J 2003/064	... Use of other elements for scan, e.g. mirror, fixed grating
G01J 2003/065	.... Use of fibre scan for spectral scan
G01J 2003/066	... Microprocessor control of functions, e.g. slit, scan, bandwidth during scan
G01J 2003/067	... Use of plane parallel plate, e.g. small scan, wobble
G01J 2003/068	... tuned to preselected wavelengths
G01J 2003/069	... Complex motion, e.g. rotation of grating and correcting translation
G01J 2003/10	.. Arrangements of light sources specially adapted for spectrometry or colorimetry
G01J 2003/102	... Plural sources
G01J 2003/104	.... Monochromatic plural sources
G01J 2003/106	.... the two sources being alternating or selectable, e.g. in two ranges or line:continuum
G01J 2003/12	. Generating the spectrum Monochromators
G01J 2003/1204	.. Grating and filter
G01J 2003/1208	.. Prism and grating
G01J 2003/1213	.. Filters in general, e.g. dichroic, band
G01J 2003/1217	... Indexed discrete filters or choppers
G01J 2003/1221	... Mounting Adjustment
G01J 2003/1226	.. Interference filters
G01J 2003/123	... Indexed discrete filters
G01J 2003/1234	... Continuously variable IF (CVIF) Wedge type

- G01J 2003/1239 ... and separate detectors
- G01J 2003/1243 ... Pivoting IF or other position variation
- G01J 2003/1247 ... Tuning
- G01J 2003/1252 ... Using "resonance cell", e.g. Na vapor
- G01J 2003/126 .. Focal isolation type
- G01J 2003/1265 .. the wavelengths being separated in time, e.g. through optical fibre array
- G01J 2003/1269 .. Electrooptic filter
- G01J 2003/1273 .. Order selection
- G01J 2003/1278 .. Mask with spectral selection
- G01J 2003/1282 .. Spectrum tailoring
- G01J 2003/1286 .. Polychromator in general
- G01J 2003/1291 .. polarised, birefringent
- G01J 2003/1295 .. Plural entry slits, e.g. for different incidences
- G01J 2003/14 .. using refracting elements, e.g. prisms ([G01J 3/18](#), [G01J 3/26](#) take precedence)
{prisms per se [G02B 5/04](#) }
- G01J 2003/145 ... Prism systems for straight view
- G01J 2003/18 .. using diffraction elements, e.g. grating ([gratings per se G02B](#))
- G01J 2003/1814 ... Double monochromator
- G01J 2003/1819 Double pass monochromator
- G01J 2003/1823 subtractive
- G01J 2003/1828 ... with order sorter or prefilter
- G01J 2003/1842 ... Types of grating
- G01J 2003/1847 Variable spacing
- G01J 2003/1852 Cylindric surface
- G01J 2003/1857 Toroid surface
- G01J 2003/1861 Transmission gratings
- G01J 2003/1866 ... Monochromator for three or more wavelengths
- G01J 2003/1871 Duochromator
- G01J 2003/1876 Polychromator
- G01J 2003/188 ... Constant deviation
- G01J 2003/1885 ... Holder for interchangeable gratings, e.g. at different ranges of wavelengths
- G01J 2003/26 .. using multiple reflection, e.g. Fabry-Perot interferometer, variable interference filters
- G01J 2003/262 ... Double pass
Multiple pass
- G01J 2003/265 ... Read out, e.g. polychromator
- G01J 2003/267 ... of the SISAM type
- G01J 2003/28 . Investigating the spectrum ([using colour filters G01J 3/51](#))
- G01J 2003/2803 .. {[using photoelectric array detector](#) }
- G01J 2003/2806 ... Array and filter array
- G01J 2003/2809 Array and correcting filter
- G01J 2003/2813 ... 2D-array

G01J 2003/2816	...	Semiconductor laminate layer
G01J 2003/282	...	Modified CCD or like
G01J 2003/2823	..	{Imaging spectrometer }
G01J 2003/2826	...	Multispectral imaging, e.g. filter imaging
G01J 2003/283	..	computer-interfaced
G01J 2003/2833	...	and memorised spectra collection
G01J 2003/2836	...	Programming unit, i.e. source and data processing
G01J 2003/284	...	Spectral construction
G01J 2003/2843	...	Processing for eliminating interfering spectra
G01J 2003/2846	..	{ using modulation grid; Grid spectrometers }
G01J 2003/285	...	Hadamard transformation
G01J 2003/2853	..	Averaging successive scans or readings
G01J 2003/2856	...	and calculation of standard deviation
G01J 2003/2859	..	Peak detecting in spectrum
G01J 2003/2863	...	and calculating peak area
G01J 2003/2866	..	Markers Calibrating of scan
G01J 2003/2869	...	Background correcting
G01J 2003/2873	...	Storing reference spectrum
G01J 2003/2876	...	Correcting linearity of signal
G01J 2003/2879	...	Calibrating scan, e.g. Fabry Perot interferometer
G01J 2003/2883	...	Correcting overlapping
G01J 2003/2886	..	Investigating periodic spectrum
G01J 2003/2889	..	{Rapid scan spectrometers; Time resolved spectrometry }
G01J 2003/2893	...	with rotating grating
G01J 2003/2896	..	Vidicon, image intensifier tube
G01J 2003/30	..	Measuring the intensity of spectral line directly on the spectrum itself (G01J 3/42 , G01J 3/44 take precedence)
G01J 2003/32	...	Investigating bands of a spectrum in sequence by a single detector
G01J 2003/323	....	Comparing line:background
G01J 2003/326	....	Scanning mask, plate, chopper, e.g. small spectrum interval
G01J 2003/42	..	Absorption spectrometry Double beam spectrometry Flicker spectrometry Reflection spectrometry (beam switching arrangements G01J 3/08)
G01J 2003/421	...	Single beam
G01J 2003/423	...	Spectral arrangements using lasers, e.g. tunable
G01J 2003/425	...	Reflectance
G01J 2003/427	...	Dual wavelengths spectrometry
G01J 2003/4275	....	Polarised dual wavelength spectrometry
G01J 2003/433	...	Modulation spectrometry Derivative spectrometry
G01J 2003/4332	....	frequency-modulated
G01J 2003/4334	....	by modulation of source, e.g. current modulation

- G01J 2003/4336 by magnetic modulation, e.g. Zeeman effect
- G01J 2003/44 . . Raman spectrometry
Scattering spectrometry; {Fluorescence spectrometry }
- G01J 2003/4412 . . . {Scattering spectrometry (particle sizing by light scattering [G01N 15/0205](#);
optical velocimetry of particles [G01P 5/00D](#)) }
- G01J 2003/4418 Power spectrum
- G01J 2003/4424 . . . Fluorescence correction for Raman spectrometry
- G01J 2003/443 . . Emission spectrometry
- G01J 2003/4435 . . . Measuring ratio of two lines, e.g. internal standard
- G01J 2003/45 . . Interferometric spectrometry
- G01J 2003/451 . . . Dispersive interferometric spectrometry
- G01J 2003/452 . . . with recording of image of spectral transformation, e.g. hologram
- G01J 2003/453 . . . by correlation of the amplitudes
- G01J 2003/4534 Interferometer on illuminating side
- G01J 2003/4538 Special processing

- G01J 2003/46 . . Measurement of colour
Colour measuring devices, e.g. colorimeters ([measuring colour temperature G01J 5/60](#))
- G01J 2003/466 . . Coded colour
Recognition of predetermined colour
Determining proximity to predetermined colour
- G01J 2003/467 . . Colour computing
- G01J 2003/468 . . of objects containing fluorescent agent
- G01J 2003/50 . . using electric radiation detectors
- G01J 2003/503 . . . Densitometric colour measurements
- G01J 2003/507 . . . the detectors being physically selective
- G01J 2003/51 . . . using colour filters
- G01J 2003/513 { having fixed filter-detector pairs }
- G01J 2003/516 with several stacked filters or stacked filter-detector pairs

- G01J 2004/00** **Measuring polarisation of light** ([investigating or analysing materials by measuring rotation of plane of polarised light G01N 21/21](#))

- G01J 2004/001 . . Devices
- G01J 2004/002 . . Selecting polarisation direction
- G01J 2004/004 . . . sequential, i.e. time-divided
- G01J 2004/005 . . . simultaneous, i.e. space-divided
- G01J 2004/007 . . . Mechanical mounting

- G01J 2004/008 . . Polarisation rate

- G01J 2005/00** **Radiation pyrometry** ([photometry in general G01J 1/00](#); [spectrometry in general G01J 3/00](#)) {[measuring temperature in general, i.e. with a contacting sensor G01K](#) ; [calorimetry of radiation beams G01K 17/00](#); [direction finders for radiant sources G01S](#) ; [intrusion](#)

detection by radiation [G08B](#) }

- G01J 2005/0022 . {for sensing the radiation of moving bodies }
- G01J 2005/0029 .. Sheet
- G01J 2005/0033 .. Wheel
- G01J 2005/0048 . Calibrating
Correcting
- G01J 2005/0051 .. Methods for correcting for emissivity
- G01J 2005/0055 .. Atmospheric correction
- G01J 2005/0059 .. Correcting for reflection of the emitter radiation
- G01J 2005/0062 .. Linearising circuits
- G01J 2005/0074 . having separate detection of emissivity
- G01J 2005/0077 . Imaging
- G01J 2005/0081 . Thermography
- G01J 2005/0085 .. Temperature profile
- G01J 2005/0092 . Temperature by averaging, e.g. by scan ([scan intended for space- resolved determination G01J 2005/0081](#))
- G01J 2005/02 . Details
- G01J 2005/06 .. Arrangements for eliminating effects of disturbing radiation
- G01J 2005/061 ... {[using cooling or thermostating of parts of the apparatus \(cooling techniques in general F17C , F25J \)](#) }
- G01J 2005/062 Peltier
- G01J 2005/063 Heating
Thermostating
- G01J 2005/065 ... by shielding
- G01J 2005/066 ... Differential arrangement, i.e. sensitive/not sensitive
- G01J 2005/067 ... Compensating for environment parameters
- G01J 2005/068 Ambient temperature sensor
Housing temperature sensor
- G01J 2005/10 . using electric radiation detectors
- G01J 2005/103 .. Absorbing heated plate or film and temperature detector
- G01J 2005/106 .. Arrays
- G01J 2005/12 .. using thermoelectric elements, e.g. thermocouples ([thermoelectric elements per se H01L 35/00, H01L 37/00](#))
- G01J 2005/123 ... Thermoelectric array
- G01J 2005/126 ... Thermoelectric black plate and thermocouple
- G01J 2005/20 .. using resistors, thermistors, or semi-conductors sensitive to radiation
- G01J 2005/202 ... Arrays

- G01J 2005/204 prepared by semiconductor processing, e.g. VLSI
- G01J 2005/206 on foils
- G01J 2005/208 superconductive
- G01J 2005/28 using photo-emissive, photo-conductive, or photo-voltaic cells
- G01J 2005/283 Array
- G01J 2005/286 Arrangement of conductor therefor
- G01J 2005/34 using capacitors {e.g. pyroelectric elements }
- G01J 2005/345 Arrays

- G01J 2005/38 using extension or expansion of solids or fluids
- G01J 2005/42 using Golay cells
- G01J 2005/425 Micro-array

- G01J 2005/50 using techniques specified in the subgroups below
- G01J 2005/52 using comparison with reference sources, e.g. disappearing-filament pyrometer
- G01J 2005/526 Periodic insertion of emissive surface
- G01J 2005/528 Periodic comparison
- G01J 2005/58 using absorption
. using polarisation
. using extinction effect
- G01J 2005/583 Interferences, i.e. fringe variation with temperature
- G01J 2005/586 Polarisation
- G01J 2005/60 using determination of colour temperature {Pyrometry using two wavelengths filtering; using selective, monochromatic or bandpass filtering; using spectral scanning }
- G01J 2005/602 {using selective, monochromatic or bandpass filtering }
- G01J 2005/604 bandpass filtered
- G01J 2005/607 on two separate detectors
- G01J 2005/608 Colour temperature of lamps, sources or the like
- G01J 2005/62 using means for chopping the light {Compensation for background radiation of chopper element }
- G01J 2005/623 Compensating radiation of chopper
- G01J 2005/626 Electrooptic chopper

- G01J 2009/00** **Measuring optical phase difference** (devices or arrangements for controlling the phase of light beams [G02F 1/01](#))
Determining degree of coherence
Measuring optical wavelength (spectrometry [G01J 3/00](#))

- G01J 2009/002 Wavefront phase distribution
- G01J 2009/004 Mode pattern

- G01J 2009/006 using pulses for physical measurements
- G01J 2009/008 using decay time in cavity

- G01J 2009/02 . by interferometric methods (using interferometers for measuring optically the linear dimensions of objects [G01B 9/02](#))
- G01J 2009/0203 .. Phased array of beams
- G01J 2009/0207 .. Double frequency, e.g. Zeeman
- G01J 2009/0211 .. for measuring coherence
- G01J 2009/0215 .. {by shearing interferometric methods }
- G01J 2009/0219 ... using two or more gratings
- G01J 2009/0223 .. Common path interferometry
Point diffraction interferometry
- G01J 2009/0226 .. Fibres
- G01J 2009/023 ... of the integrated optical type
- G01J 2009/0234 .. Measurement of the fringe pattern
- G01J 2009/0238 ... the pattern being processed optically, e.g. by Fourier transformation
- G01J 2009/0242 .. Compensator
- G01J 2009/0249 .. with modulation
- G01J 2009/0253 ... of wavelength
- G01J 2009/0257 .. multiple, e.g. Fabry Perot interferometer
- G01J 2009/0261 .. polarised
- G01J 2009/0265 ... with phase modulation
- G01J 2009/0269 .. Microscope type
- G01J 2009/0273 .. Ring interferometer
- G01J 2009/0276 .. Stellar interferometer, e.g. Sagnac
- G01J 2009/028 .. Types
- G01J 2009/0284 ... Michelson
- G01J 2009/0288 ... Machzehnder
- G01J 2009/0292 ... Fizeau
Wedge
- G01J 2009/0296 ... achromatic

- G01J 2011/00** **Measuring the characteristics of individual optical pulses or of optical pulse trains**

- G01J 2011/005 . Streak cameras